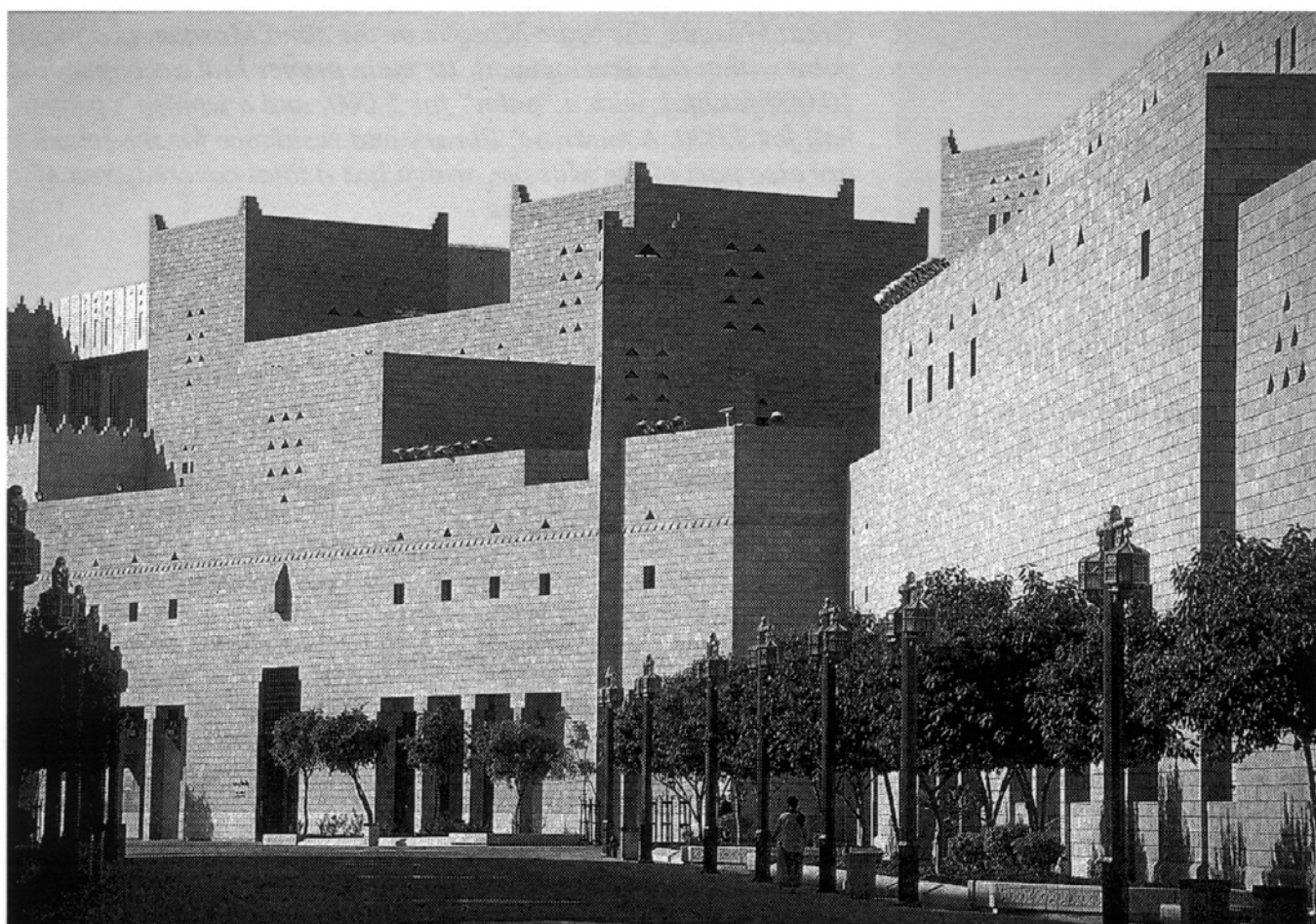




**1995 Technical Review
Summary**
by Mukhtar Husain

Justice Palace and Imam Turki Mosque

Riyadh, Saudi Arabia
1354.SAU



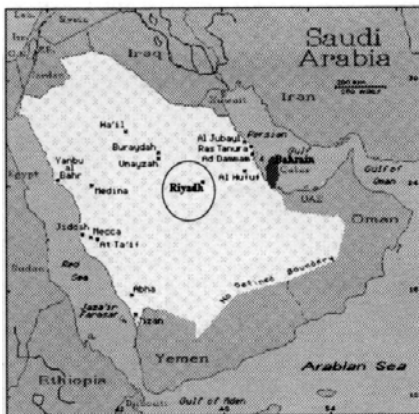
Architect
Rasem Badran

Client
*Arriyadh Development Authority
HRH Prince Salman Bin Abdul Aziz
H.E. Dr. Mohammad Bin Abdul Aziz Al-Shaikh*

Completed
April 1989

The Justice Palace, the Mosque, the arcades and open spaces constitute Phase 2 of a development plan for the Qasr al Hokm District, the old centre of Riyadh, Saudi Arabia. The overall master plan is intended to revitalise the city centre by revitalising the values and memory of the area, which has a rich cultural, social and political history. The Justice Palace incorporates formal and informal halls including the Royal Majlis, the Prince's Majlis, the Great Hall, an auditorium, and the offices of the Governor and Deputy Governor of Riyadh, totally covering about 35,000 square metres.

The Imam Turki bin Abdullah Mosque, also referred to as the Great Mosque, the State Mosque or the Jami Mosque, is a focal point within the development. Its main prayer hall accommodates 10,000 faithful, with a "sahn" for 5,000, and a women's prayer hall for 2,000. A madrasa, library and residence for the Imam are also part of the Mosque, which has a total covered area of about 30,000 square metres.



Riyadh is located in central Saudi Arabia, 380 km inland from the Persian Gulf

Context

Historical background

At present Riyadh, or Arriyadh, is one of the fastest growing cities in the world. Its land area has multiplied more than 100 fold in less than half a century, growing from 8 square kilometres in the early 1940's, to 845 square kilometres today. Its population has also expanded almost 100 times during the same period, from 25 thousand to nearly 3 million.

Riyadh, however, is not purely a modern phenomenon. It is an ancient city, having deep historical roots. When the Banu Hanifah settled in the Yamamah region about two centuries before the advent of Islam, the town of Hajar became the residence for its rulers as well as a commercial centre.

People looked to Hajar for trade, as a place to settle judicial disputes and as the seat of their tribal origins.

The town of Hajar decentralised in the 16th century, scattering into small villages. At the beginning of the 18th century, the name Riyadh was given to a number of these villages and their surrounding areas.

Riyadh became a base for the Saudi state in 1810 AD. Imam Turki bin Abdullah moved to Riyadh and established it as his capital. He built a wall around the city to protect its residents from external attack.

He erected a Qasr, a fortified palace, in the heart of the town as a seat of government, and also built a great mosque. During the 1860s, the fortress of Masmak was constructed northeast of the Qasr.

King Abdulaziz bin Abdulrahman Al Faisal restored Riyadh in 1893, and rebuilt its wall of mud and bricks to a height of 7.5 metres. The wall included a number of gates of various sizes that were located to align with trade routes in all principal directions. There were small gates, as well. The

wall also contained a number of fortresses and towers, most of which were circular and sloped inward at the top. A few of these towers were square or rectangular, and their heights ranged from 9 to 12 metres. This huge wall was largely destroyed in 1950, as construction of the surrounding areas overwhelmed the old quarter of the city.

Local architecture

Riyadh falls within the Province of Najd or the Central Province. Buildings in this region are characterised as being in the Najdi style. Examples may be seen in the old quarter of Riyadh including the fortress of Masmak, and other striking examples are located in the ruins of Diriyah, some fifty kilometres from Riyadh along the Wadi Hanifa. Unfired clay bricks, finished in mud plaster which were the basic building material in the past, give excellent insulation against summer heat and chilly winds in winter.



Aerial view of central mosque complex, Justice Palace, and public arcade

Roofs are usually made of tamarisk tree trunks with palm matting spread above, then covered with a layer of mud. Mouldings, crenellations and elaborately shaped mud finials, sometimes painted white, beautify the exterior, and are executed with grace and restraint.

The windows and air-vents, peepholes and hatches, by which occupants of houses look out or watch for the arrival of visitors, were carefully worked into the overall design to maintain privacy. Triangular decorations of the doorway and parapet were widely used throughout the region. The only other external decorations were rows of V-shaped mouldings on the walls.

The typical Najdi mosque consists of a walled enclosure around an open courtyard, with a covered sanctuary built against the "Qibla" wall. Cut into this is the mihrab niche, which projects beyond the back wall of the mosque, an arrangement common in both ancient and modern mosques in Saudi Arabia. The roof of the sanctuary rests on

colonnades with keel-arches, the number of colonnades depending on the size and importance of the mosque. Some mosques have underground prayer chambers for use in winter. In the Riyadh area and southern Najd, one or two staircases almost always give access to the roofs. In this area, the mosques are either without minarets entirely, or have a diminutive tower over the staircase to the roof.

Climate

Situated on a sedimentary plateau 600 metres above sea level, Riyadh has a very dry climate and low rainfall, but also has a good underground water supply which makes it one of the few naturally fertile areas in the Saudi Kingdom outside of the southwest. The dryness of the air, and lack of clouds produces very high summer temperatures. But the cloudlessness also allows heat to escape from the earth's surface at night. This is especially true in winter, so temperatures drop quite

markedly between day and night, and between the seasons.

Rainfall is irregular and unreliable, occurring mostly during the months of October through April. Summers are practically totally without rain.

Riyadh: Climate (temperature in degrees Celsius; rainfall in millimetres)

	Temp, Average Max.	Temp. Average Min.	Rainfall Average
Jan.	21	08	03
Feb.	23	09	21
Mar.	28	13	23
April	32	18	25
May	38	22	11
June	42	25	T
July	42	26	0
Aug.	42	24	0
Sep.	39	22	0
Oct.	34	16	0
Nov.	29	13	T
Dec.	21	09	T

T = trace of rainfall

Absolute Min.: 7 degrees Celsius

Total rainfall 84: millimetres

Absolute Max.: 45 degrees Celsius

Site

The Qasr Al Hokm District, as the area is known, is the central core of the old city of Riyadh, defined by Imam Turki Bin Abdullah Street to the north, Tareq Bin Ziad Street to the south, King Faisal Street to the east and King Fahd Road to the west.

Development within this area is being undertaken in phases by the



*Plaza which links
the mosque with
the Justice Palace*

Arriyadh Development Authority (ADA). In Phase 1, the buildings for the Riyadh Governorate, the Municipality and the Police were completed. Phase 2, which was completed in 1992, included the construction of Imam Turki Bin Abdullah Mosque, Qasr Al Hokm, or the Justice Palace, Al Adl Square, Assafat Square, Al Imam Mohammed Bin Saud Square, Al Masmak Square, the two gates of Al Thumairi and Dukhna, Ad Deera Tower, parts of the old wall of the city, and, in addition to public

utilities, a number of public streets, and some commercial and office facilities. Planning is already in an advanced stage for Phase 3 development, which covers the areas developed in the two previous plans.

In view of the nearly total redevelopment of the entire Qasr Al Hokm District, the Justice Palace and Mosque relate primarily to each other, to recently constructed buildings, and to several large open spaces. There is an extension of the Mosque to the east, housing a

madrasa, offices and shops, which extends further as an arcade. This arcade, along Imam Turki Bin Abdullah Street, encloses part of a car park and bridges the gap between the Mosque and the Masmak fortress. This network of buildings, squares and arcades forms an urban complex of which the Justice Palace and Mosque, in a distinct Najdi architectural idiom, are the focal point, and the restored Masmak Fort is another major highlight.

Access to this vast area is from all surrounding roads. The public entrance to the Justice Palace faces Al Imam Mohammed bin Saud Square. The Royal Entrance to the Justice Palace is from Assafat Square. This corresponds to the entrance to the main prayer hall of the Mosque. The formal entrance to the Mosque, through its courtyard, relates to Al Adl Square. The Mosque may also be entered at several points on Imam Turki Street. The roads within and around the Qasr Al Hokm district are busy on weekdays, but not overly congested.

The squares mentioned above are landscaped, with patterned paving, ornamental lighting and a large number of date palms. People approach the Mosque on foot from all directions through these squares, or via the car parks near Al Masmak, and the multi-storey car park south of Ad Deera Souq.

As part of the Phase 2 develop-



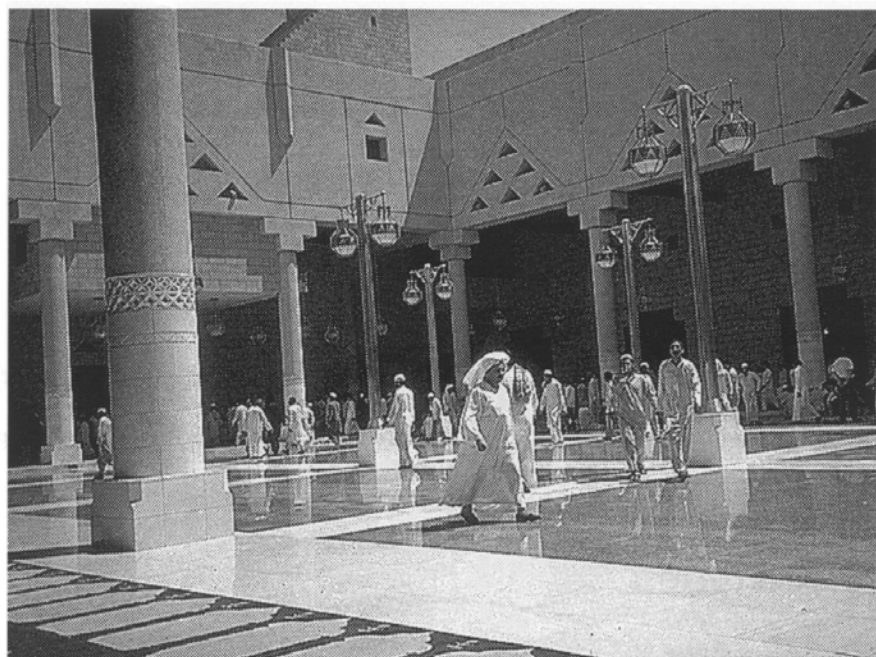
Section

Justice Palace, Riyadh, Saudi Arabia

ment, the city walls and some of the gates and towers were rebuilt at their original locations. Where it was not possible to reconstruct replicas of the original walls, gates and towers, their locations have been marked with stones and special paving.

Topography

The area is generally level, except for a stairway approaching Al Adl Square from the east. The inter-connecting squares are all generally at the same level. There are a few steps down from the Mosque arcade onto Imam Turki Bin Abdullah Street to the north.



The internal courtyard of the mosque is also used as an outdoor prayer area

Programme

The rapid growth and frenetic pace of development of Riyadh, from a tiny settlement to a city of nearly 3 million within a period of about 50 years led to the virtual obliteration of traditional Najdi architectural heritage. It has been replaced by a panoply of new office buildings, mosques, palaces, hotels, apartment blocks, water towers and factories, interspersed with tree lined avenues and multi-level intersections primarily designed for automobile traffic.

Although many of these glass, steel and concrete structures are quite elegant and designed to exacting modern standards of modern detailing, it was felt that these buildings, and this type of planning were alien to the spirit and culture of the locality.

The Qasr Al Hokm Development Programme was, therefore, conceived to revitalize the Qasr Al Hokm District as the City Centre of Riyadh, and to enable it to resume its historic role as a political, cultural and commercial centre of the city.

The ADA set out to create a careful balance between new construction and the preservation of

Justice Palace, Riyadh, Saudi Arabia

traditional elements. The Qasr Al Hokm District was to reflect the indigenous character of Riyadh as a city by preserving the traditional pattern of relationships between buildings, squares and streets.

Architecturally, it was intended that the design of the buildings and public areas be inspired by the spirit of traditional local architecture, whether in the open spaces, the structural forms, the external and internal architectural details, or the facades. It was in this context that a decision was made to rebuild the Justice Palace and Mosque at their respective locations within the Qasr Al Hokm District.

General objectives

The design of the Justice Palace and the Mosque was intended to provide a religious and governmental centre and to allow the interaction of people within an environment that was intellectually, spiritually and physically indigenous, rather than alien. Moreover, the Justice Palace and the Mosque were to express the relationship between government, religion and the people according to the Wahabi Reformist philosophy.

Functional requirements

The Justice Palace

- Royal entrance
- Royal majlis
- Royal dining hall
- Royal private dining area
- Royal office
- Royal private majlis
- Public entrance
- Public majlis
- Prince's private majlis
- Prince's public majlis
- Prince's private dining area
- Conference hall/auditorium
- Waiting areas
- Offices
- Service areas
- Total area approximately 35,000 m²

The Mosque

- Prayer spaces
- Grand Prayer Hall for 10,000 persons
- Women's Prayer Hall for 2,000 persons
- External Prayer space (Sahn) for 5,000 persons.

Other facilities

- Office space for Arriyadh Development Authority.
- Office space for the Committee of Religious Affairs
- Madrasa, library, computer centre, Imam's residence
- Total area approximately 3000m²

Description

Building data

The Justice Palace and Mosque are situated close to each other and are connected by two bridges across Assafat Square. To the south of the Palace are three buildings housing the Riyadh Municipality, the Governorate and Police Headquarters. A three floor extension of the Mosque toward the east, along Imam Turki Bin Abdullah Street houses a Madrasa and offices. A two level arcade extends eastward along the road towards Al Masmak, and to the south towards Al Awqaf Al Khairia Souq, enclosing Al Adl Square.

The Justice Palace

- Footprint Area 11,500 m²
- Total area 35,000 m²
- External height of connecting bridges, 13.50 metres
- External height along periphery, 20.00 & 27.00 metres
- Maximum height (AC plant over auditorium), 40.00 metres.

The Mosque

- Footprint Area 16,800 m²
- Total area 30,000 m²
- Internal height of Grand Prayer Hall 13.50 metres
- External height of Grand Prayer Hall 20.00 metres
- External height of Minarets 45.00 metres.

Design concept

The reconstruction of the Justice Palace and Mosque, which was completed in 1992, makes the third time these buildings were built during this century at almost the same location. The first reconstruction was in 1920 during the unification of the Saudi Kingdom. In 1960, these mud-brick structures were rebuilt as part of the modernization of Riyadh.

The Justice Palace and Mosque constituted the focal point of the Phase 2 development of the Qasr Al Hokm district. The design of these

two buildings earned an award in 1985 through an international competition. The intention was to conserve the original role this district played in the life of the city.

The architect began by analysing environmental, climatic and cultural factors, local traditions, norms and social behaviour, and their effect on the architectural image of these buildings.

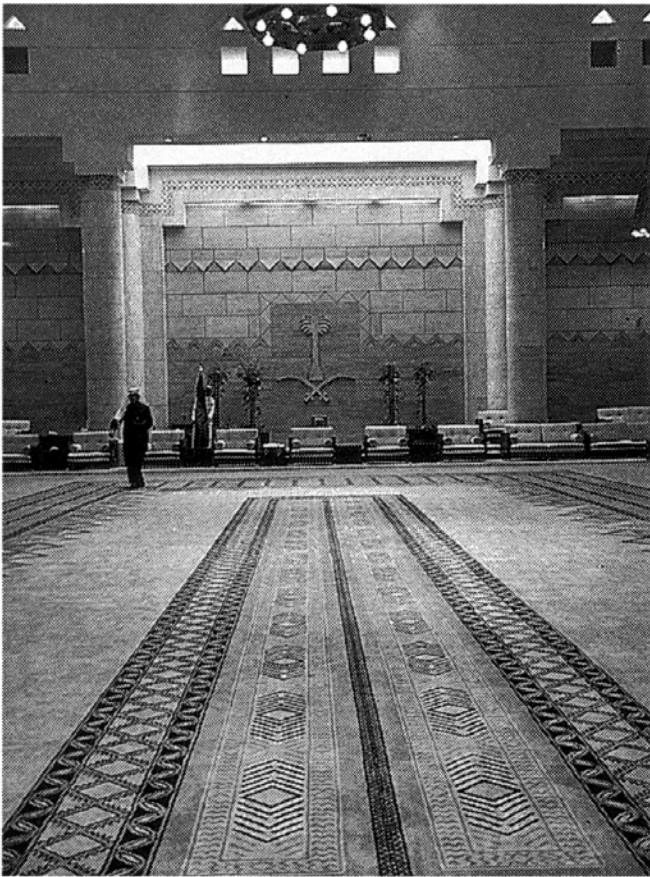
The Justice Palace

The Palace Complex reflects the Masmak fortress close by. This image is articulated at different levels. Firstly, the walls facing the street and open squares resemble the walls of the fort and the old city walls. Secondly, the main building, as one dominant mass, resembles the four-towered fortress of Al Masmak.

Externally, the Justice Palace is a group of buildings behind walls, with traditional elements such as gates and towers. Internally, the use of columns, courtyards and narrow alleys



*The official entrance
and courtyard to the
Justice Palace,
Riyadh, Saudi Arabia*



The interior of the royal majlis

which receive daylight, sometimes direct sunlight, remind one of traditional elements used in institutional buildings, or Mamluk houses of the Islamic era.

The Mosque

The architectural character of the Mosque was inspired by an old photograph taken in 1930 showing the original building at this location. It was also directly inspired by a mud-brick mosque, recently renovated and still in use at Diriyah.

Both externally and internally, Rasem Badran has recreated the spatial character of earlier buildings, bringing them back to life without copying them, and skillfully integrating this design with the surrounding context in an interactive relationship reminiscent of the historic role of a Mosque as part of the city, rather than a Mosque as a monument.

In order to instill the memory of the place in the minds of the local people, the architect adopted the

traditional components of the Mosque, which are the sahn (courtyard), riwaq (arcade) and musalla (prayer hall). Two square minarets have been located at the north and the south ends of the prayer hall, indicating the qibla direction on the skyline. There are no domes, as these are usually associated with mausoleums and tombs, and are not compatible with the Wahabi philosophy of the Saudis.

The main prayer hall, with columns on a 9 metre x 9 metre square grid (hypostyle) evokes earlier palm trunk construction. The column grid also defines the qibla direction, and prayer rows

The ancillary functions on the north side along the road resemble more closely the scale and articulation of the surrounding buildings.

Connecting bridges

Two bridges link the Justice Palace with the Mosque across an open square. These echo a similar link

between the former Palace and Mosque, and symbolise the desired relationship between the ruler and his people within an informal socio-political domain.

Walls and openings

The outer walls are clad in local limestone. Limited size and number of openings were common in traditional buildings due to the harsh desert conditions and for reasons of privacy. This pattern has been followed for additional security requirements too. The small triangular openings in a patterned formation resemble traditional building practices, and create a dialogue between the past and the present.

Crafts and ornament

Triangular crenellations and stepped finials adorn the building exteriors. Other local crafts, including furniture, frescoes and woodwork have been used to enrich the interior of the Justice Palace and the Mosque. The simplicity of the ornamentation, used with skill and restraint, evokes the past and distinguishes each building, relating them culturally to their local and regional context.

Open squares and landscaping

The Justice Palace and Mosque project includes a number of public courtyards, or squares, which have become an important part of the urban fabric of the Riyadh city centre. These squares are aligned toward the qibla, to allow their use as additional prayer space on Eids and Fridays. Landscaping has been planned for some of these squares, and date palms were planted to ameliorate the harshness of the paved surface, to provide shade and to enhance the poetic aesthetic of the space. This is meant to recall the past, when mud buildings were surrounded by an oasis of palm groves.

The urban arcade

The proposal for the Justice Palace and Mosque initially included the third element of a Cultural Centre. These three buildings were intended to provide, at the city centre, a comprehensive framework fulfilling administrative and material functions (the Justice Palace) a spiritual function (the Mosque) and cultural and intellectual functions (the Cultural Centre).

This comprehensive framework was challenged when the Cultural Centre was cancelled. The gap created between the Mosque and Palace and the rest of the city was filled by including an urban envelope east of the Mosque. This provides the desired hierarchy of transition zones between the project and Al Masmak in the form of public plazas, courtyards and gateways which connect this project to the urban

fabric of the city.

This urban envelope contains, at ground level, seating areas surrounded by palm groves and water features. The upper level may be used for open cafes, galleries and other public functions. This arcade encourages the interaction between the complex and everyday activities in the surrounding area and may appropriately be called "a living wall."

Materials and technology

Materials

The Justice Palace

Cast in-situ concrete bearing walls were used for external walls, with cast in-situ concrete column and beam construction for the halls, including large spaces. Higher internal volumes were shaped by the use of gypsum board panels. Founda-

tions included a raft over piles and retaining walls were used for the basement.

The Mosque

Locally pre-fabricated exposed aggregate concrete columns, column heads, arch-units, spandrels, light boxes and double-T beams were assembled on site for the main prayer hall. Other parts of the structure were constructed using standard cast in-situ concrete bearing walls, and column and beam system. Foundations consisted of a raft over piles.

Other structures

- Reinforced concrete retaining/bearing walls.
- Columns and beams in-situ construction.
- Precast hollow-core concrete slabs.

Infill

- Precast exposed aggregate concrete panels.
- Concrete block walls.

Rendering and finishes

- Open-joint cladding in bush hammered Riyadh limestone for external walls.
- Closed-joint pointed cladding in Riyadh stone for internal walls.
- Pre-cast exposed aggregate concrete elements.
- Polished Rosa Bitá Granite with open joints (imported).
- Cement plaster with textured paint.
- Gypsum plaster-board with paint (local).
- Ceramic tiles (local).

Floors

- Polished marble and granite (imported).
- Flamed granite (imported).
- Custom-made and standard carpets (locally fabricated)
- Local Terrazzo and ceramic tiles.



Interior view of the prayer hall

Justice Palace, Riyadh, Saudi Arabia

- Velour carpets (local).

Ceilings

- Gypsum board (local).
- Wood beams, ribs and panels (imported wood, locally fabricated).
- Mineral fibre and metal strip ceiling (imported).
- Exposed aggregate pre-cast double-T beams.

Roofing

- Built-up roofing system with concrete tiles (local).

Other elements

- Doors: Solid and hollow core (imported wood, locally fabricated), steel doors and blast-proof wood and glass doors.
- Windows: Extruded aluminium, double glazed (imported profiles and glass, locally assembled).
- Screens: Solid wood (imported wood, locally fabricated).
- Cornices and Mouldings: Plaster of Paris and GRC strips (locally produced).

Technology

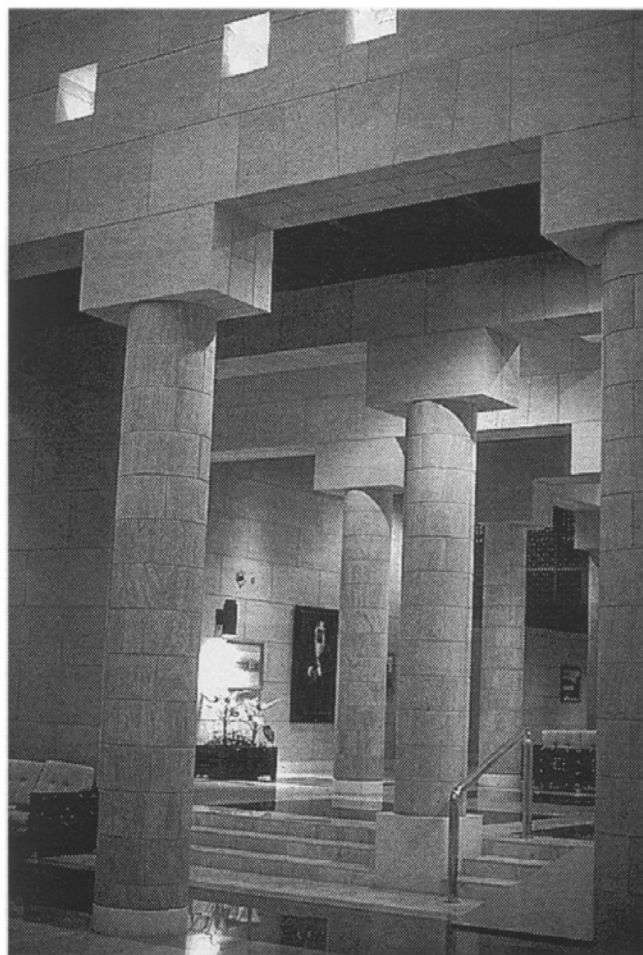
Local Riyadh limestone was anchored to external walls with open joints using polystyrene sheet surface for ultraviolet protection.

The Justice Palace

Natural lighting and ventilation systems were combined to resemble the arrangement within ventilation towers in traditional buildings.

Some of the main building components were designed as multi-purpose towers to accommodate the air-conditioning plant at the top of the building. This allowed for the use of vertical air-conditioning ducts in the walls. The same ducts also served as conduits for cables which provide artificial lighting in the halls.

*Public entrance
court of the Justice
Palace*



main halls and offices to increase air movement, provide indirect lighting to avoid the need for external windows. An water-channel in the towers separates the major functions, with glazed skylights above and provides a degree of humidity in an otherwise arid climate.

The Mosque

Openings for natural light and ventilation were provided over each column head in the Main Prayer Hall, resembling the ventilation towers in traditional buildings. The towers house air-conditioning units and supply cool air through vertical ducts built within the walls. The same ducts provide conduits to allow artificial lighting. A cool draft was thus provided directly downwards, without a need for horizontal ducting or a false ceiling. This non-central-air-conditioning system, each unit of which is individually controllable, provides great flexibility and can be adjusted according to the occupancy level of the Mosque and is distin-

operating costs. Moreover, it enables exposure of the beams and other building components which resemble traditional building interiors.

Decorative glass lampshades with a distinct yellowish glow are suspended at two levels within the Prayer Hall, with fixed mercury luminaires at a higher level. In combination, the three layers help light the internal structure and ceiling and provide a level of lighting suitable for reading at the floor level.

Courtyard lighting consists of glass lampshades mounted on posts. Similar lampposts are located in the square between the Mosque and Justice Palace.

Site utilities

As part of the phased development of the Qasr Al Hokm District, road improvements and utility services works, within and around the District, were established and, in some cases, extended to serve the new development's increased

Origin of

Technology

- Reinforced concrete in-situ construction (local)
- Reinforced concrete pre-cast units (fabricated locally).

Materials

- Cement (local)
- Steel (imported)
- Wood, aluminium, glass (imported, fabricated locally)
- Marble and granite (imported)
- Ceramic tiles, terrazzo, carpet, gypsum board, roof insulation, and water proofing (local)
- Mineral fibre ceiling (imported)
- Door hardware (imported)
- Air-conditioning plant, elevators (imported)
- Light fixtures (imported)
- Fire alarm & security systems (imported)
- Sanitary fixtures & faucets (imported).

Labour force

The labour force was 100 per cent foreign.

Professionals

- Architect (Jordanian)
- Main Contractors for the Justice Palace: (French), for the Mosque: (South Korean)
- Consultants (foreign and local)
- Suppliers (foreign and local).

Construction schedule and costs

The Justice Palace

History of the project

- Commissioned 1986
- Design 1986-87
- Construction August 87 -

October 91

- Occupancy February 1992

Total cost	Saudi Riyals	US\$
Infrastructure	42,000,000	11,200,000
Labour	66,000,00	17,600,000
Materials	104,000,000	27,733,333
Landscaping	18,000,000	4,800,000
Professional fees	18,000,000	4,800,000
Total cost	248,000,000	66,133,333

Cost of land 70,000,000 18,666,666

Exchange rate:
(US\$ 1.00 to SAR 3.75)

Comparative cost

This building cost much less than any similar building in recent years. It would be fair to say that the cost was less than 50 per cent of the average cost.

Cost per square metre:
SAR 6,500 US\$ 1,733

The Mosque

History of the project

- Commissioned 1985
- Design 1985-86
- Construction February 87 - October 91
- Occupancy February 1992

Total Cost	SAR	US\$
Infrastructure	42,000,000	11,200,000
Labour	49,000,000	13,066,666
Materials	77,000,000	20,533,333
Landscaping	18,000,000	4,800,000
Professional fees	14,000,000	3,733,333
Total cost	200,000,00	53,333,333

Cost of land 100,000,000 26,666,666
(Exchange rate
US\$ 1.00 to SAR 3.75)

Comparative costs

This building cost 40 per cent below the average for such a building in

Saudi Arabia.

Cost per square metre
SAR 6,500 US\$ 1,733

Maintenance costs

Specific figures for these buildings could not be obtained. However, in view of special environmental considerations, including insulated and shaded walls, small external openings, and cooling from roof-mounted units through vertical ducts directly to the areas of use, the operating cost of the air-conditioning is likely to be low.

Similarly, it is apparent that provisions for daylight into the innermost sections of the buildings through skylights and shafts reduces dependence on artificial lighting during daylight hours.

Technical assessment

Functional assessment

The Justice Palace

A weekday visit to the Palace, although not altogether indicative either its routine or ceremonial functions, provide an opportunity to feel the sequence, flow and internal atmosphere of the many formal and informal halls and other offices, waiting areas, circulation routes and internal courtyards.

All fixed and installed items in the interior, including hard and soft furnishings, hardware, signage, lighting, elevators, were all designed by the architect. The complete harmony and total impact of this effort is impressive.

The Mosque

I observed the Friday afternoon (Juma) prayers. People flowed in from all sides, through the open squares and from the openings to the



Detail of structural column and beam

north. The congregation overflowed the main prayer hall and the main courtyard. People were observed offering prayers in the shaded passages and alleyways. After prayer, people remained in small groups in the squares to the east and south of the Mosque, talking, with younger ones running around in the paved area. Many were seen sitting on the granite seats along the north wall of the Justice Palace, facing the Mosque. The two drinking fountains along that wall were also in active use. There was no significant littering of the area, although 15,000 persons had been there.

On a weekday visit to the Mosque after the Isha prayers, a number of people were seen in the squares, or crossing these open spaces. Some people were observed, shoes in hand, entering the main prayer hall from the south and crossing through to the road on the north.

It appears that on Wednesday and Thursday evenings, which is the weekend in Riyadh, the squares present a fairly busy scene, with scores of children playing and families sitting on rugs in the squares, enjoying the cool evening and the serene vista. On hot days the fountains in Al Adl square are very popular, with boys cycling through the bubbling water.

Based on discussions with several

people in the ADA at all levels, it is evident that they are extremely satisfied with the architect and proud of what he has created. It is also evident that people, in general, recognize the spirit and character of these buildings and the spaces around them and feel completely at ease using them and interacting with them in the manner in which they are culturally accustomed.

These two buildings, the urban arcade and the squares between them may be considered functionally to be a complete success.

Climatic performance

The Justice Palace and Mosque are both protected from the heat and glare of the summer sun by stone-clad, insulated, external walls, which have only a limited number of small openings.

Daylight permeates deep within most parts of these buildings through judiciously placed internal courtyards and skylights. Lighting in the various halls of the Justice Palace, both in quantity and character, is appropriate to its functions. Ventilation and acoustics in all the large internal spaces is admirable. The artificial light within the main prayer hall of the Mosque has a rich warm glow which enhances the simple structure. Night lighting designed by

the architect for the open courts is pleasant. However, a number of flood lights subsequently installed by the client atop the parapets to illuminate the open spaces is somewhat harsh.

The Mosque is oriented towards the qibla (about 22 degrees south-west). The northern part of the Justice Palace is aligned with the Mosque to create a rectangular open space between them called As Safat Square. There is a change of axis within the Palace, which the architect has handled masterfully. The Al Adl Square and the urban arcade to the east of the Mosque are aligned with the Mosque.

Materials and level of technology

Simple yet durable materials have been selected for the exteriors, and the public areas of these buildings. The result is two relatively maintenance-free buildings. The construction procedures and detailing, however, are contemporary and of a high quality. This includes the pre-cast concrete elements used in the construction of the Main Prayer Hall of the Mosque, and exposed aggregate concrete, bush-hammered stone cladding fixed with anchors to external walls, extruded polystyrene insulation on roofs and walls, and double glazed glass. There is a subtle degree of ornamentation, including the triangular crenellations in the stone cladding, the size and placement of triangular openings at strategic locations, and patterned flooring and woodwork.

In all cases, a small range of simple materials has been used in a contemporary manner to evoke elegance and grandeur within a distinctly indigenous architectural vocabulary.

Maintenance

No problems were apparent. The cladding looks as good as new. The flooring, woodwork and other internal finishes have worn well. Building joints have also been skilfully blended into the cladding and finishes.

Design features

The massing and of the Justice Palace and Mosque respectively, as well as the articulation of spaces and openings, and the placement of courtyards around them has succeeded in evoking a completely indigenous character to this complex; although in construction and detail they are unmistakably modern buildings. As a result, the two buildings have been integrated totally into the urban fabric of the district.

Users

The Justice Palace is the formal headquarters of the Riyadh District Amir (Governor). From the Palace he administers organizational, economic and social matters. These matters are discussed and judged in the presence of the people involved in the Majlis, which operates on certain days of the week. The Palace is also where the new King is crowned. Formal receptions for visiting heads of state are held here. It is, therefore, a very important building in the affairs of government and the life of the city.

The Mosque is the formal State Mosque in Riyadh. It is also the congregational mosque for Friday prayers and Eid prayers. As such, it is used by all. People from neighbouring areas, as well as citizens from all parts of Riyadh come to pray here and to enjoy its serenity and beauty.

Both buildings have become a contemporary symbol of administra-

tive, religious and social significance for people from all classes, while at the same time evoking memories of the old city in harmony with the desert environment.

Users' response

Discussions with the client, architects, members of the local community and resident expatriates indicate that all are pleased with the form, scale and character of these buildings, and that they are proud of them. They feel these buildings, though modern, are very much a part of the local culture and spirit.

Project Personnel

Client:

Arriyadh Development Authority, under the High Commission for the Development of Arriyadh.

- HRH Prince Salman Bin Abdul Aziz, Governor of Riyadh, Chairman of the High Commission for the Development of Arriyadh.

His concern reflects the importance of the renovation and revival of the Qasr Al Hokm District which was seen as both the heart of the Kingdom's capital, as well as the historic source of the drive to unify the peoples of the Kingdom of Saudi Arabia.

- H.E. Dr. Mohammad Bin Abdul Aziz Al-Shaikh, Minister of Municipal and Rural Affairs.

A former member of the High Commission for the Development of Arriyadh, he is also the former President of Arriyadh Development Authority. It was under his administration that the Development Plan for Qasr Al Hokm District (including the Justice Palace and Mosque) was conceived, designed and implemented.

Architect & Interior Designer:

- Rasem Badran
 - Infrastructure Planning and Landscaping

- Wagenfeld & Boedeker, with Saudi Consulting Services (Guidelines for landscaping in the squares were given by the architect.)

Engineering Consultant:

- Buro Happold
- Contractor for the Justice Palace Dumez
- Contractor for the Mosque Keang Nam

*Mukhtar Husain
May 1995*